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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHIGERU ASHIDA and TOMOYUKI SHINOHARA

Appeal 2009-002582
Application 10/523,829
Technology Center 2800

Decided: March 24, 2010

Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and JEFFREY B. ROBERTSON, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-20. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

Claims 1, 13, and 18 are representative of the subject matter on appeal and are set forth below:

1. An electrical connector comprising:

a terminal fixed to a connector housing;

a conductor exposed from a covering and having a connection portion connected to a connection portion of the terminal;

a foam element at a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor, located around respective connection portions of the conductor and the terminal.

13. An electrical connector comprising:

a cable comprising:

an electrical wire including a conductor exposed from a first covering;

a drain wire arrayed parallel to the electric wire; and

a jacket holding the electric wire and the drain wire;

a connection terminal having a connection portion connected to an end of the conductor;

an earth terminal having a connection portion connected to an end of the drain wire;

a connector housing receiving the connection terminal and the earth terminal;

a second covering located around the foam resin, and

a foam resin having a foam ratio selected to substantially match the impedance of the connection portion with the first and second coverings of the conductor, located around the end of the conductor, the connection portion of the connection terminal, the end of the drain wire and the connection portion of the earth terminal.

18. A method of fabricating a connector for a signal transmission cable, comprising:

welding a terminal and a cable conductor to each other for connection;

forming a pair of foam resin covering members preliminarily formed into shapes which conform to an upper half shape and a lower half shape of connection portions of the terminal and the cable conductor;

fitting said pair of covering members around the connection portions of the terminal and the cable conductor;

molding a resin for a connector housing around the terminal, the covering members, and the cable conductor exposed from a covering, thus to form the connector housing in a predetermined shape.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Hutchison	4,070,084	Jan. 24, 1978
Knapp	4,521,064	Jun. 4, 1985
Beamenderfer	4,834,674	May 30, 1989
Bates	4,864,081	Sep. 5, 1989
Urushibata	5,057,650	Oct. 15, 1991
Ichikawa	5,780,774	Jul. 14, 1998
Moore	6,064,003	May 16, 2000

THE REJECTION(S)

1. Claims 1-4, 6-10, and 14-16 are rejected under 35 U.S.C. § 103(a) as being obvious over Moore in view of Knapp.

2. Claim 5 is rejected under 35 U.S.C. § 103(a) as being obvious over Moore in view of Knapp, and further in view of Hutchinson.

3. Claim 11 is rejected under 35 U.S.C. § 103(a) as being obvious over Moore in view of Knapp and further interview of Urushibata.

4. Claim 12 is rejected under 35 U.S.C. § 103(a) has been obvious over Moore in view of Knapp and further in view of Bates.

5. Claims 13 and 17 are rejected under 35 U.S.C. § 103(a) over Beamenderfer in view of Knapp.

6. Claims 18 and 20 are rejected under 35 U.S.C. § 103(a) over Ichikawa in view of Moore and Knapp.

7. Claim 19 is rejected under 35 U.S.C. § 103(a) over Ichikawa in view of Bates and Knapp.

We note that the Examiner has withdrawn the § 112, second paragraph rejection. Ans. 13.

ISSUE

Rejections 1-4

Have Appellants identified error in the Examiner's determination that Moore in view of Knapp suggests the aspect of claim 1 of "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor"?

Rejection 5

Have Appellants identified error in the Examiner's determination that Beamender in view of Knapp suggests the aspect of the claims of "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor"?

Rejection 6

Have Appellants identified error in the Examiner's determination that Ichikawa in view of Moore and Knapp suggests the aspect of the claim 20 of "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor", as well as the aspect of claim 18 of "forming a pair of foam resin covering members preliminarily formed into shapes", "fitting said pair of covering members around the connection portions", and "molding a resin for a connector housing around the terminal, the covering members and the conductors"?

Rejection 7

Have Appellants identified error in the Examiner's determination that Ichikawa in view of Bates and Knapp suggests the aspect of claim 19 of "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor"?

FINDINGS OF FACT

Rejections 1-4

We refer to the Examiner's findings regarding Moore and Knapp on pages 5-6 of the Answer.

Rejection 5

We refer to the Examiner's findings regarding Beamenderfer and Knapp on pages 8-10 of the Answer.

Rejection 6

The additional fact findings are:

Ichikawa teaches a pair of synthetic resin covering members (4, 9) which are fitted around connection portions. Ichikawa, Figure 3. Moore teaches a resin connector housing (74) that is fitted around a terminal, the covering members and the conductors. Moore, Figure 8.

Ichikawa discloses welding a lead wire 1 (a terminal) and a flat cable 2 (a cable conductor) to each other for connection, and forming the resin material 9, preliminarily formed into a shape, which conforms to an upper half shape. Ichikawa, Figure 3, col. 3, ll. 26-39.

Rejection 7

The additional fact findings are: we refer to the Examiner's findings on pages 12-13 of the Answer.

PRINCIPLES OF LAW

It is the claims that define the invention and, therefore, the absence in the prior art of subject matter not included in the claims cannot be a basis for patentability. *See Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988); *see In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) ("Many of appellant's arguments fail from the outset because . . . they are not based on limitations appearing in the claims.").

"As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that

the references be combined for the reasons contemplated by the inventor." *In re Beattie*, 974 F.2d 1309, 1312 (Fed. Cir. 1992).

Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911F.2d 705, 709 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255. *See also Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780-81 (Fed. Cir. 1985).

ANALYSIS

Rejections 1-4

For these rejections, we confine our discussion to claim 1 (claims 8, 14, and 15 have similarly recited features) which contains limitations representative of the arguments made by Appellants, pursuant to 37 C.F.R. § 41.37(c)(1)(vii)(2007). Also, our focus is on the combination of Moore in view of Knapp (Appellants' arguments with regard to the other secondary references are essentially that these other secondary references do not cure the alleged deficiencies of the combination of Moore in view of Knapp).

Appellants argue that the combination does not suggest "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor" as recited in claim 1. Appellants allege that

Moore fails to teach or suggest any foam element. Appellants argue that "Knapp, while disclosing a foam material, only teaches or suggests the use of the foam material as a seal against water penetration and ice formation. (col. 3, ll. 32-38)." Br. 18.

Appellants also argue that whether or not the applied art has a same or similar structure is not relevant because the applied art does not suggest selecting a foam ratio to substantially match the impedance of the connection portions with the covering of the conductor. Br. 17. Appellants then allege that the Examiner relies on Appellants' Specification to provide support for the rejection.[1] Br. 18.

We are not convinced by the above-mentioned arguments for the following reasons.

As explained by the Examiner on pages 16-17 of the Answer, it is the Examiner's position that because Knapp teaches a foam element having a foam ratio greater than 20%, specifically 35%-55%, to provide a balance between moisture-proof qualities and the compressibility of the material, one skilled in the art would have desired to provide the foam element (72) of Moore with such a foam ratio so that the moisture-proof qualities of the foam element will not be reduced or eliminated. Thus, the Examiner does not rely upon the Specification in the matter argued by Appellants. Also, the

[1] Appellants state that the Examiner analogizes that because Knapp teaches that the foam element should have a foam ratio of 20% or more, Knapp somehow discloses selecting a foam element at a foam ratio to substantially match the impedance of the covering of the conductor because Appellants' Specification (page 12, ll. 5-7) indicates that a foam ratio of 20% or more would have such properties.

stated motivation is appropriate. *In re Beattie*, 974 F.2d at1312. The Examiner then states because the structure of the combination is the same or similar, the structure will "substantially match the impedance of the connection portion with the covering of the conductor". We agree. *In re Spada*, 911F.2d at 709; *In re Best*, 562 F.2d at 1255; *Titanium Metals Corp.*, 778 F.2d at 780-81.

In the Reply Brief, Appellants then argue that the Examiner improperly deduces that Knapp, which teaches the benefits of a foam ratio of at least 20%, must necessarily disclose that the foam ratio matches the covering of the conductor. Appellants assert that the fallacy of the Examiner's logic is that merely providing a foam ratio above 20% does not necessarily match the impedance of the foam element to the covering of the conductor. Rather, there would be only a subset of values within the foam ratio in excess of 20% that may meet this criterion, e.g., 41-43 % (depending on the impedance of the covering).

We are not convinced by the above-mentioned argument for the following reasons.

Firstly, Appellants have not provided any evidence that there would be only a subset of values within the foam ratio in excess of 20% that would provide a substantially matching impedance. Secondly, Knapp discloses foam ratios entirely within Appellants' claimed range, and Appellants have not provided any evidence that the polyurethane foams of Moore having the foam ratio would not have substantially matching impedance.[2] Finally, Appellants' argument is not commensurate in scope with the claims (the

[2] The claims recite a foam ratio selected to "substantially match" the impedance.

claims do not recite a subset of values of from 41 to 43% and the claims only require that). *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d at 1571; *In re Self*, 671 F.2d at 1348.

In view of the above, we affirm rejections 1-4.

Rejection 5

Appellants state that they argue this rejection for the same reasons set forth above with regard to the rejection of claim 1 under Moore in view of Knapp. Br. 22. Appellants allege that Beamenderfer fails to compensate for the above mentioned deficiencies and that this combination fails to teach "a foam ratio selected to substantially match the impedance of the connection portions with the covering of the conductor," as recited in claims 13 and 17 Appellants state that Knapp fails to teach or suggest this feature, and that Beamenderfer is silent with regard to any foam element.

Appellants' arguments do not point to any error regarding the Examiner's fact findings made on pages 8-10 of the Answer. Furthermore, while Appellants argue that Beamenderfer is silent regarding any foam element, the Examiner relies upon Knapp for this teaching.

Appellants then argue that Knapp fails to suggest the claimed feature of "a foam ratio selected to substantially match the impedance of the connection portions with the covering of the conductor". We disagree, and refer to our analysis, *supra*, regarding the teachings of Knapp as they relate to the aspect of Appellants' claim directed to the matching of impedance.

In view of the above, we affirm the rejection of claim 5.

Rejection 6

Appellants allege that one of ordinary skill in the art would not be motivated to replace the resin members of Ichikawa with the foam members of Moore to provide a water-tight seal over the connection portion as proposed by Examiner. Appellants argue that no portion of Ichikawa implies that a water-tight seal is desired. Appellants also argue that replacing the resin with foam would destroy the high strength between the connection portions and the conductors as taught by Ichikawa. Br. 22-24.

We are not convinced by the above-mentioned arguments for the following reasons.

First, as stated by the Examiner on page 19 of the Answer, the Examiner did not propose to replace the resin members of Ichikawa with the foam members of Moore. Rather, the resin members of Ichikawa were modified to be foamed resin as taught by Moore to provide a water-tight seal. Also, as stated by the Examiner on pages 19-20 of the Answer, modifying the resin members of Ichikawa to be foamed resin members would not destroy the high strength between the connection portion and the conductors because the modified foamed resin members of Ichikawa are further covered by a connector housing.

Appellants then argues that even if combined as proposed by the Examiner, the combination fails to teach or suggest "forming a pair of foam resin covering members preliminarily formed into shapes", "fitting said pair of covering members around the connection portions" and "molding a resin

for a connector housing around the terminal, the covering members and the conductors". Appellants also argue that the resin material 9 of Ichikawa is not preliminarily formed and then fitted around the connection portions. Br. 24.

We are not convinced by the above-mentioned arguments for the following reasons.

As stated by the Examiner on page 20 of the Answer, the combination of Ichikawa and Moore teaches a pair of foam resin covering members (4, 9) which are fitted around the connection portions, and a resin connector housing (74 of Moore) is fitted around the terminal, the covering members and the conductors. Claim 18 recites welding a terminal and a cable conductor to each other for connection, and forming a pair of foam resin covering members preliminarily formed into shapes. In other words, the welding is formed before the forming of the upper half. Ichikawa discloses welding the lead wire 1 (a terminal) and the flat cable 2 (a cable conductor) to each other for connection, and forming the resin material 9, preliminarily formed into a shape, which conforms to an upper half shape.

In view of the above, Appellants have not identified error in the Examiner's determination regarding Rejection 6.

Rejection 7

Appellants do not identify error in the Examiner's findings made on pages 12-13 of the Answer. Rather, Appellants state that they traverse this rejection for the same reasons presented with regard to claim 1. Appellants

argue that Knapp in combination with Bates and Ichikawa is deficient in that there is no motivation to match any impedance values. Br. 25.

For the reasons expressed, *supra*, regarding the teachings of Knapp as related to the claimed impedance matching, we affirm this rejection of claim 19.

CONCLUSIONS OF LAW

Rejections 1-4

Appellants have not identified error in the Examiner's determination that Moore in view of Knapp suggests the aspect of claim 1 of "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor".

Rejection 5

Appellants have not identified error in the Examiner's determination that Beamenderfer in view of Knapp suggests the aspect of the claims of "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor".

Rejection 6

Appellants have not identified error in the Examiner's determination that Ichikawa in view of Moore and Knapp suggests the aspect of claim 20 of "a foam ratio selected to substantially match the impedance of the connection portion with the covering of the conductor", as well as the aspects of claim 18 of "forming a pair of foam resin covering members

preliminarily formed into shapes", "fitting said pair of covering members around the connection portions", and "molding a resin for a connector housing around the terminal, the covering members and the conductors.

Rejection 7

Appellants have not identified error in the Examiner's determination that the aspect of claim 19 of "a foam ratio selected to substantially match the impedance of the connection portions with the covering of the conductor" is suggested by the applied art.

DECISION

Each rejection is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(v).

AFFIRMED

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